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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/509,181	09/23/2004	Swindell Allen Grimsley	PP/3-22330/A/CGC 2113/PCT	7342
324 7590 02/05/2007 CIBA SPECIALTY CHEMICALS CORPORATION PATENT DEPARTMENT 540 WHITE PLAINS RD P O BOX 2005 TARRYTOWN, NY 10591-9005			EXAMINER CORDRAY, DENNIS R	
			ART UNIT	PAPER NUMBER
			1731	
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		02/05/2007	PAPER	

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/509,181	GRIMSLEY ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Dennis Cordray	1731	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 16 October 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10/16/2006 has been entered.

### ***Response to Arguments***

2. Applicant's amendments and arguments, see pp 5-8, filed 9/20/2006, have overcome the rejections of claims 1-11 and 13-17 under 35 U.S.C. 102(b). None of the references explicitly or inherently discloses recycled paper comprising coated waste wherein the coating contains latex. Therefore, the rejections have been withdrawn. However, upon further consideration, new grounds of rejection are made as detailed below.

3. With regard to Applicant's remarks on pp 5-7, the Examiner thanks Applicant for the definitions of the terms "broke", "white water", "pitch", "stickies", and "white pitch", and for clarifying the various sources of recycled paper.

4. Applicant's argument on pp 9-10 that the Shields and Linhart references, and the instant Disclosure do not teach that white pitch is inherently present in a papermaking process, as stated by the Examiner in the previous Office Action, is convincing. The

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references teach only that stickies, tackies and/or white pitch are impurities that are typically present in pulp produced from recycled paper. None of the particular impurities are inherently present.

5. Applicant's argument on p 9 that stickies or tackies are not "white pitch," based on the supplied definitions, is not convincing. Applicant states that white pitch is derived from coated and recycled paper which coating contains latex and that stickies are derived from pressure sensitive adhesives. The definition supplied only states that stickies are "sticky materials in recycled papermaking pulp, often involving pressure sensitive labels." Thus pressure sensitive labels (which comprise pressure sensitive adhesives) are only one source of sticky materials. A somewhat broader definition accepted in the art is (Smook, G.A. "Handbook of Paper and Pulp Technology", p 155):

"STICKIES: Sticking conditions in secondary fiber or papermaking systems created by such contraries as ink residuals, tars, latexes, and heat-melt materials. The term "tackies" refers to the same type of problem, perhaps less severe."

The definition of "white pitch" from the same reference (p 157) is:

"WHITE PITCH: Term used to describe agglomerated white stickies in repulped stock which are derived from the synthetic binders in coated broke."

Further disclosure of the occurrence and composition of "stickies" as understood in the art are provided by Ling et al (5936024) and Juzukonis et al (6090905) as follows:

"Since stickies contaminants are present in varying amounts in recycled paper, they often cause special problems at various stages of the papermaking process." (Ling et al, col 1, lines 15-17)

"Stickies are generally a diverse mixture of polymeric organic materials which can stick on wires, felts or other parts of paper machines, or show on the sheet as "dirt spots". The sources of stickies may be pressure-sensitive adhesives, hot melts, waxes, latexes, binders for coatings, wet strength resins, or any of a multitude of additives that might be contained in recycled paper." (Ling et al, col 1, lines 30-33)

"The terms "stickies" and "tackies", as used herein, are interchangeable terms that primarily include synthetic contraries found in secondary fiber. More particularly, stickies are defined as adherent deposits caused by organic materials used in paper and board coating and converting operations which are typically introduced into paper machine furnishes with recycled fibers." (Juzukonis et al, col 1, lines 24-30)

"Stickies are a diverse mixture of synthetic materials ranging from hot-melt and pressure-sensitive adhesives to binders and coatings for inks or wet strength resins, ink residuals, tars and latexes." (Juzukonis et al, col 1, lines 34-37)

It is thus understood by one of ordinary skill in the art that stickies can arise from recycled coated paper and comprise latex and/or white stickies (white pitch) and consequently, any treatment targeting the removal or reduction of stickies in papermaking pulps would be expected to apply to recycled coated paper comprising latex and/or white stickies (white pitch).

***Claim Rejections - 35 USC § 103***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

6. Claims 1-11 and 13-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Langley et al (4913775) in view of Smook (Smook, G.A. "Handbook of Paper and Pulp Technology", pp 155,157).

Langley et al discloses a process for making paper comprising:

- a).adding to the paper stock a cationic polymer followed by addition of
  - b) anionic bentonite clay microparticles (at least 90% below 100 microns)
- (Abstract; col 10, lines 59-63; col 11, lines 3-5; col 11, lines 27-28).

Langley et al discloses that the papermaking stock can be made from any conventional papermaking stock, including stocks comprising recycled or waste pulp (col 8, lines 14-19). The cationic polymer has a molecular weight of at least 500,000 (col 8, lines 46-47). The polymer comprises one or more of cationic monomers of diallyldimethyl ammonium chloride, dialkylaminoalkyl-(meth)acrylates or - (meth)acrylamides or quaternary ammonium salts thereof, polyethyleneimines, or polyamine epichlorohydrin. The polymer can be copolymerized with acrylamide monomers (col 8, lines 52-67; col 9, lines 1-2). Cationic monomers are preferably present at greater than 10% (col 9, lines 19-26) up to 100% of the monomers (col 8, lines 52-55). The bentonite is defined to include anionic swelling clays such as montmorillonite and Fullers Earth (col 11, lines 3-10).

Langley et al discloses that the cationic polymer is added in an amount from 0.03 to 0.5% based on the dry weight of the paper (col 9, lines 26-30 and 50-67), which overlaps the range used in Examples 1 and 2 on p 9 of the instant Specification. The bentonite is added in an amount from 0.03 to 0.5% (col 10, lines 66-67), which lies within the range disclosed on p 7, 2<sup>nd</sup> par from bottom of the instant Specification.

A particularly preferred embodiment comprises addition of a second cationic polymer of molecular weight between 50,000 and 2,000,000 that results in improved removal of pitch or stickies (col 13, lines 5-17 and 32-33). Preferred second cationic polymers are polymers or copolymers of polyethyleneimine, diallyldimethyl ammonium chloride, dialkylaminoalkyl-(meth)acrylates or -(meth)acrylamides, polyamines and polydicyandiamide-formaldehydes (col 12, lines 19-29). The amount of second cationic polymer added is from 0.01 to 0.5 % based on the dry weight of the stock. The optimum amount of addition (effective amount) can be found by routine experimentation (col 12, lines 63-66). Note that the wording of the instant claims allows for more than one cationic polymer.

Langley et al discloses that the stock can comprise conventional amounts of strengthening agents or alum (col 8, lines 32-45). Alum is also a known retention aid (col 2, lines 15-21), thus will also act as a coagulant.

Langley et al discloses a paper sheet formed using the process (col 14, line 40-62, Example 1).

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Langley et al does not disclose reducing the deposition of white pitch or that the recycled paper comprises located paper containing latex.

Smook et al defines stickies and white pitch in the art as follows (Smook, G.A. "Handbook of Paper and Pulp Technology", pp 155,157):

"STICKIES: Sticking conditions in secondary fiber or papermaking systems created by such contraries as ink residuals, tars, latexes, and heat-melt materials. The term "tackies" refers to the same type of problem, perhaps less severe."

"WHITE PITCH: Term used to describe agglomerated white stickies in repulped stock which are derived from the synthetic binders in coated broke."

It is thus understood by one of ordinary skill in the art that stickies can arise from recycled coated paper and comprise latex and/or white stickies (white pitch), and consequently, any treatment targeting removal (reduction) of stickies in papermaking pulps would be expected to also apply to recycled coated paper comprising latex and/or white stickies.

The art of Langley et al, Smook and the instant invention is analogous as applying to papermaking stocks comprising stickies or white pitch. It would have been obvious to one of ordinary skill in the art at the time of the invention to treat papermaking pulp comprising recycled coated paper containing latex to remove or reduce stickies (including white pitch) using the cationic polymers and microparticles of Langley et al in view of Smook as a well known method of treating paper stocks



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comprising stickies. The treatment would be done with a reasonable expectation of success.

7. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Langley et al in view of Shimasaki et al (5262570).

Langley et al disclose the use of polyethyleneimines (or polyethylene polyamines) as suitable cationic polymers. Langley et al does not disclose that the cationic polymer is a polyalkylene polyamine prepared by the reaction of an alkylene polyamine with a difunctional halide.

Shimasaki et al teaches that ethylenediamine reacts with ethylene dichloride to form diethylenetriamine and other ethyleneamine adducts, which are polyethylene polyamines (col 1, lines 11-21).

The art of Langley et al, Shimasaki et al and the instant invention are analogous as pertaining to the formation of polyalkylene polyamines. It would have been obvious to one of ordinary skill in the art at the time of the invention to use the reaction of an alkylene polyamine with a difunctional halide to form the polyalkylene polyamines for the cationic polymers in the process of Langley et al in view of Shimasaki et al as a well known process for making polyalkylene polyamines.

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***Conclusion***

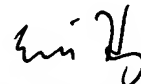
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dennis Cordray whose telephone number is 571-272-8244. The examiner can normally be reached on M - F, 7:30 -4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on 571-272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



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